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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/581,188

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EXAMINER

RUMP, RICHARD M

ART UNIT

PAPER NUMBER

1793

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/581,188	Applicant(s) VENKATRAMAN ET AL.	
	Examiner Richard M. Rump	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-10 and 12-15 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Application

Claims 1-10 and 12-15 are pending and presented for examination. The rejections over Dorfman and Bakert are hereby withdrawn.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-, 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6228471 to Neerinck in view of US Patent No. 6821497 to Moronuki (Which cites JP 10-130865 and which an abstract thereof is also provided).

Regarding claims 1-3, & 13-15, Neerinck discloses a layered structure wherein alternating layers of DLN and DLC are deposited on a substrate (column 3, lines 20-30 *et seq.*). However, an intermediate layer of metal (specifically titanium or chromium) is not expressly stated.

In a layered structure, Moronuki discloses usage of a metal bridge layer such as titanium or chromium (Moronuki: column 2, lines 13-28) between a substrate and DLN. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to perform the layered structure of Neerinck in view of the intermediate metal layer of Moronuki. The teaching or suggested motivation for doing so is that it enhances the DLN absorption.

Regarding claim 4, the metal bridge layer is between 500 nm and 8 microns which overlaps that range instantly claimed (See abstract of JP 10-130865)

Regarding claims 5-6, the thickness of the DLC is between 0.1 and 3 microns and the second layer between 0.1 and 2 microns equaling a total size of 0.2 to 5 microns which overlaps that instantly claimed as such a *prima facie* case of obviousness exists (See MPPE 2144.05).

Regarding claim 7, a similar composition is disclosed (column 2, line 54).

Regarding claims 8-9, the coating (DLN) may be doped with metals to increase its tribological properties (column 2, lines 51-60). The same would obviously hold true for the DLC as metal doping is mentioned as a possibility for DLC (Column 1, line 46) for control of mechanical properties.

Regarding claim 12, deposition via ion deposition is taught by Neerink (column 3, line 45 bridging column 4, line 20) and with in the inclusion of the metal layer, this is considered to be at a minimal obvious for the reasons above.

Response to Arguments

Applicant's arguments, see remarks, filed 18 December 2009, with respect to the rejection(s) of claim(s) 1-10 and 12-15 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Neerink in view of Moronuki.

Conclusion

Claims 1-10 and 12-15 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard M. Rump whose telephone number is (571) 270-5848. The examiner can normally be reached on Monday through Friday 7:00 AM-4:30 PM (-5 GMT).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571)272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. M. R./
Examiner, Art Unit 1793

/Stuart Hendrickson/

Primary Examiner, Art Unit 1793